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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,130	02/22/2002	David Ernest Johnston	01-002	8493
29293	7590	08/11/2004	EXAMINER	
FREUDENBERG-NOK GENERAL PARTNERSHIP INTELLECTUAL PROPERTY DEPT. 47690 EAST ANCHOR COURT PLYMOUTH, MI 48170-2455			PATEL, VISHAL A	
			ART UNIT	PAPER NUMBER
			3676	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,130

Applicant(s)

JOHNSTON, DAVID ERNEST

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination was filed in this application on 7/14/04 and is accepted.

Claim Objections

2. Claims 3, 6, 7 and 11 are objected to because of the following informalities:

Claim 3, line 1, "s al" should be --seal-- and "wh rein" should be --wherein--.

Claim 6, line 12, "th " should be --the--.

Claim 7, line 1, "sp cified" should be --specified-- and "wh rein" should be --wherein--.

Claim 11, line 10, " ntire lin r" should be --entire liner--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6-9, 11-14 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cather, Jr. (US. 4,504,067).

Regarding claim 1: Cather discloses a shaft seal assembly comprising a case (10) having axial and radial portions (axial portion 20 and radial portion 24), an elastomeric seal body (12) molded to the case, a lip portion (lip portion 26 having a polymeric liner 14 having a liner lip 30) extending from the seal body, a first end of the elastomeric lip portion originating adjacent a

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hinge portion (hinge portion adjacent to the spring 16 and between the lip 26 and the body 12). A polymeric liner (14) bonded along its full length to the elastomeric lip portion (liner 14 extends over full length of 26).

The polymeric line (14) attached to the lip portion (26). The radial portion having a length. The seal body includes a radial portion having a length less than the length of the radial portion of the case (the seal body 40 fits within the case). A portion (portion of liner that is above 22 and along 24) of the liner extending over at least a portion of the radial portion (portion of 24 that is adjacent to the portion of the liner) of the case. The entire polymeric liner being movable (the liner moves away and toward the case in response to the shaft 40) with the elastomeric lip portion about the hinge portion toward and away from the case.

Regarding claim 2: The case includes the radial portion having a length (length of 24). The elastomeric seal body includes a radial portion (radial portion of 12) having a length less than the radial portion of the case (this is the case since the elastomeric body 12 does not extend along entire length of 24). The elastomeric lip portion (26) extends over at least a portion of the length of the radial portion of the case (the elastomeric lip portion 26 that is adjacent to the radial portion 24).

Regarding claim 3: The elastomeric lip portion is integrally formed with the elastomeric seal body and extends over the length of the radial portion of the case of which the radial portion of the elastomeric seal body does not extend (this is the case since the elastomeric body is 12 and the elastomeric lip portion 26 starts at 24 to tip of 30).

Regarding claim 4: The polymeric liner is bonded to the elastomeric lip portion (the liner is bonded to the elastomeric lip portion 26, column 2, lines 68-69).

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Regarding claim 6: A seal assembly including a case (10) having a radial portion (24), an elastomeric seal body (12) molded to case and not covering the entire radial portion of the case (this is the case since the elastomeric body is 12 and the elastomeric lip portion 26 starts at 24 to tip of 30).

An elastomeric lip portion (the elastomeric lip portion 26 starting at 24 to tip of 30) extending from a hinge portion (hinge portion adjacent to the spring 16 and between the elastomeric lip 26 and the body 12) of the elastomeric seal body and covering the radial portion of the case not covered by the elastomeric seal body.

A polymeric liner (14) bonded along its full length of the elastomeric lip portion, a portion of the elastomeric lip portion and a portion of the polymeric liner extending over at least a portion of the radial portion of the case (portion of the elastomeric lip and portion of the polymeric liner that is on a portion of the radial portion 24 near 22). The entire polymeric liner being movable about the hinge portion with the elastomeric lip portion toward and away from the case (the liner moves away and toward the case in response to the shaft 40).

Regarding claim 7: Material of the elastomeric lip portion adjacent the elastomeric seal body and the radial portion of the case forms a flexible hinge (material of the elastomeric lip adjacent seal body and after the spring 16).

Regarding claim 8: The polymeric line is formed from polytetrafluoroethylene (column 3, line 41).

Regarding claim 9: The polymeric liner includes a contact surface (surface of the polymeric line contacting the shaft 40).

Regarding claim 10: A seal assembly (seal assembly of Cather) for use with a rotating element (40) comprising a case (10) having an axial portion (20) and a radial portion (24), a seal body (12) bonded to at least the radial portion of the case, a hinge (hinge between 12 and lip portion) extending from the seal body adjacent to a terminating section of the radial portion of the case. A lip (lip formed by 26) extending from the hinge (the lip 26 extending from the hinge). A liner (14) bonded along its full length to the lip over the full length of the lip, a portion of the lip and a portion of the liner extending over at least a portion of the radial portion of the case, the entire liner being movable with the lip portion about the hinge portion toward and away from the case.

Regarding claim 12: The seal body, the hinge portion, and the lip are integrally formed together (the seal body, hinge portion and the lip are integrally formed together).

Regarding claim 13: The seal body, the hinge portion, and the lip are formed from an elastomeric material (the seal body, the hinge portion and the lip are formed of elastomeric material).

Regarding claim 14: The liner is formed from polytetrafluoroethylene.

Regarding claim 16: The radial portion of the case has a length that is greater than the radial length of the seal body (this the case since the body extends only a portion of the radial length, the hinge extends over a second portion of the radial length and the lip extends over a third portion of the radial length).

Regarding claim 17: The hinge extends over the radial portion of the case that is not covered by the seal body (this the case since the body extends only a portion of the radial length,

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the hinge extends over a second portion of the radial length and the lip extends over a third portion of the radial length).

Regarding claim 18: The liner is bonded to the lip.

Regarding claim 19: The hinge portion receives more bending stresses than the liner (this is the case, since the hinge portion is the one that gets bent).

Regarding claim 20: The lip receives more bending stresses than the liner (this is the case since the lip is the one that gets bent with the hinge portion).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cather, Jr in view of Riesing (US. 2,804,325).

Cather discloses the invention substantially as claimed above but fails to disclose that the polymeric liner has hydrodynamic grooves. Riesing discloses a polymeric liner having hydrodynamic grooves (54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the polymeric liner of Cather to have hydrodynamic grooves as taught by Riesing to provide a more effective seal and to pump fluid away from the sealed surface (column 2, lines 48-52 of Riesing).

Response to Arguments

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann, can be reached on (703) 306-4115.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.


Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: 703-872-9326, for formal communications for entry before Final action: or,
703-872-9327, for formal communications for entry after Final action.

Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP
August 7, 2004


Vishal Patel
Patent Examiner
Tech. Center 3600